

LIST OF CONTENTS

VOLUME 43, NUMBER 1, 1989

1 *Editorial*

W. E. Alnaser (Bahrain)

2 *Articles*

3 Characteristics of the available wind energy in Bahrain

D. Sragovich (Israel)

7 Transient analysis for designing and predicting operational performance of a high temperature sensible thermal energy storage system

A. Akbarzadeh (Australia)

17 Convective layers generated by side walls in solar ponds: observations

H. Rubin and G. A. Bemporad (Israel)

25 Analysis of turbulent flow in thermal layers of the advanced solar pond (ASP)

H. Rubin and G. A. Bemporad (Israel)

35 The advanced solar pond (ASP): basic theoretical aspects

A. Argiriou, R. Pasquetti, F. Papini, A. Arconada, and M. Audibert (France)

45 Thermal study of the receiver of a focusing solar collector using infrared thermography

J. R. Hull, D. L. Bushnell, D. G. Sempsrote, and A. Pena (U.S.A.)

57 Ammonium sulfate solar pond: observations from small-scale experiments

65 *Books Received*

VOLUME 43, NUMBER 2, 1989

H. S. Jarosch (Israel)

2 *Articles*

67 Estimation of parameters for a solar furnace

R. N. Chapman (U.S.A.)

71 Development of sizing nomograms for stand-alone photovoltaic/storage systems

A. Longheto, G. Elisei and C. Giraud (Italy)

77 Effect of correlations in time and spatial extent on performance of very large solar conversion systems

P. A. Hobson and B. Norton (U.K.)

85 A design nomogram for direct thermosyphon solar-energy water heaters

K. G. T. Hollands and M. F. Lightstone (Canada)

97 A review of low-flow, stratified-tank solar water heating systems

H. C. Hottel (U.S.A.)

107 A review paper—Fifty years of solar energy research supported by the Cabot Fund

VOLUME 43, NUMBER 3, 1989

Articles

Y. Jaluria and B. T. O'Mara
(U.S.A.) 129 Thermal field in a water body for solar energy storage and extraction due to a buoyant two-dimensional surface water jet

H. Tributsch (F.R.G.) 139 Feasibility of toxic chemical waste processing in large scale solar installations

J. M. Huacuz, F. Sierra, C. Venegas, and C. Ramos
(Mexico) 145 Development of a submersible shadowgraph for the study of interfaces in salt-gradient solar ponds

J. A. Davies and D. C. McKay (Canada) 153 Evaluation of selected models for estimating solar radiation on horizontal surfaces

M. A. Hassab, I. A. Tag, W. A. Kamal, and F. M. Al-Noaimi (Qatar) 169 Problems encountered in operating salt gradient solar ponds in the Arabian Gulf region

F. Vignola and D. K. McDaniels (U.S.A.) 183 Direct radiation: Ratio between horizontal and tilted surfaces

VOLUME 43, NUMBER 4, 1989

Articles

L. C. Spencer (Australia) 191 A comprehensive review of small solar-powered heat engines: Part I. A history of solar-powered devices up to 1950

L. C. Spencer (Australia) 197 A comprehensive review of small solar-powered heat engines: Part II. Research since 1950—"conventional" engines up to 100 kW

L. C. Spencer (Australia) 211 A comprehensive review of small solar-powered heat engines: Part III. Research since 1950—"unconventional" engines up to 100 kW

F. J. Newland (Hong Kong) 227 A study of solar radiation models for the coastal region of South China

M. Farid and K. Yacoub
(Iraq) 237 Performance of direct contact latent heat storage unit

VOLUME 43, NUMBER 5, 1989

Articles

C. Gueymard (Canada) 253 A two-band model for the calculation of clear sky solar irradiance, illuminance, and photosynthetically active radiation at the earth's surface

B. Norton (N. Ireland), D. E. Prapas (Greece), P. C. Eames, and S. D. Probert (U.K.) 267 Measured performances of curved inverted-Vee, absorber compound parabolic concentrating solar-energy collectors

M. A. Rosen, F. C. Hooper, and A. P. Brunger (Canada) 281 The characterization and modelling of the diffuse radiance distribution under partly cloudy skies

**H. Wiener, B. Zaidman,
and Y. Sasson (Israel)** 291 Storage of energy by solutions of alkali formate salts

G. Lewis (U.S.A.) 297 The utility of the Angstrom-type equation for the estimation of global irradiation

**H. S. Sahsamanoglou and
A. A. Bloutsos (Greece)** 301 Solar radiation reduction by water and dust in the area of Thessaloniki

**B. G. Patil and
G. T. Ward (New Zealand)** 305 Simulation of solar air drying of rapeseed

Letters to the Editor

D. L. Evans (U.S.A.) 321 Comments on *Load/weather/insolation data base for estimating photovoltaic array and system performance in Egypt*

**E. El-rafey and
M. El-sherbiny (Egypt)** 321 Reply to comments by D. L. Evans

J. J. Michalsky (U.S.A.) 323 *Errata*

VOLUME 43, NUMBER 6, 1989

Articles

**F. J. K. Ideriah and
S. O. Suleman (Nigeria)** 325 Sky conditions at Ibadan during 1975–1980

**M. T. Y. Tadros and
M. A. M. Shaltout (Egypt)** 331 Effect of Hanning and Parzen windows and Kalman filter on the spectral analysis of solar constant and solar activities

**H. Suehrcke and
P. G. McCormick (Australia)** 339 Solar radiation utilizability

D. R. Myers (U.S.A.) 347 Estimates of uncertainty for measured spectra in the SERI spectral solar radiation data base

**I. A. Raja and
J. W. Twidell (U.K.)** 355 Distribution of global insolation over Pakistan

**T. Feuillard, J.-M. Abillon,
and R. Bonhomme
(French West Indies)** 359 Relationship between global solar irradiation and sunshine duration in Guadeloupe

**T. Feuillard, J.-M. Abillon,
and C. Martias
(French West Indies)** 363 The probability density function $P(K_h, \bar{K}_h)$ of the clearness index: A new approach

**I. Morales and
F. F. de la Rosa (Spain)** 373 Continuous photosynthetic production of hydrogen peroxide by the blue-green algae *Anacystis nidulans* R2 as a way to solar energy conversion

**J. L. Wright and
K. G. T. Hollands (Canada)** 379 Radiant and free convective heat transfer through a pleated (V-corrugated) plastic film

S. Coppolino (Italy) 385 A simple model for computing diffuse solar radiation

393 Volume 43, 1989—List of Contents and Author Index